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CHAPTER Env-Wm 1400 PETROLEUM STORAGE FACILITIES

PART Env-Wm 1401 UNDERGROUND STORAGE FACILITIES

Statutory Authority: RSA 146-C:9 and RSA 146-A:11-c

Env-Wm 1401.01 <u>Purpose</u>. The purpose of these rules is to set forth the requirements for underground storage tank facilities under RSA 146-C to prevent and minimize contamination of the land and waters of the state due to the storage and handling of motor fuels, heating oils, lubricating oils, other petroleum and petroleum contaminated liquids, and hazardous substances, by establishing criteria for registration and permitting, and standards for design, installation, operation, maintenance, and monitoring of such facilities.

Source. #6499, eff 4-24-97; ss by #8281, eff 2-3-05

Env-Wm 1401.02 <u>Applicability</u>. These rules shall apply to all underground storage tank facilities having an individual tank capacity of greater than 110 gallons or of unknown size that store or have stored regulated substances with the following exclusions:

- (a) Underground storage tank facilities that are used solely for residential heating use;
- (b) Underground storage tank facilities having no tank with a storage capacity of more than 1,100 gallons and which are used solely for the storage of heating oil for on-premises use;
- (c) Systems where less than 10% of the total volume of the tank(s) and associated piping is below the surface of the ground;
- (d) Any system that is located in an underground room or vault if the system is totally above or upon the surface of the floor, and no portion of any tank is covered, surrounded, or buried with soil or stone or other material, and all system components can be visually inspected;
- (e) Emergency spill or overflow containment systems that are emptied within 48 hours of the introduction of a regulated substance;
- (f) Equipment or machinery that contains regulated substances for operational purposes such as hydraulic lift tanks and electrical equipment tanks;
- (g) Oil-transmission pipelines subject to the Natural Gas Pipeline Safety Act of 1968 or the Hazardous Liquid Pipeline Safety Act of 1979;
- (h) Oil/water separators at wastewater treatment facilities regulated by the Clean Water Act Section 402 or 307(b), and oil/water separators at oil and gas production facilities;
- (i) Septic tank systems or floor drain collection tank systems that collect waste for the purpose of segregating such waste from septic systems;
- (j) Flow-through process systems which form an integral part of a production process through which there is a steady, variable, recurring, or intermittent flow of materials during the operation of the process. Flow-through process systems shall not include tanks used for the storage of materials prior to their introduction into the production process or for the storage of finished products or by-products from the production process;
 - (k) Facilities containing radioactive material regulated under the Atomic Energy Act of 1954; and
- (l) Underground storage tank facilities that store products containing concentrations of regulated substances that are less than the allowable drinking water standard for the regulated substances.

Source. #6499, eff 4-24-97; ss by #8281, eff 2-3-05

Env-Wm 1401.03 Definitions.

- (a) "As-built record drawing(s)" means a facility plan that clearly delineates the plan as as-built record drawing(s) that records the actual installation conditions for a new facility or for a substantially modified facility.
- (b) "Backfill" means a process that includes covering tanks, piping, and system equipment with materials required by the manufacturer's specifications and the placement of paving and concrete pads over the backfill materials.
- (c) "Cathodic protection system" means a system used to reduce the corrosion of a metal surface by making that surface the cathode of an electrochemical cell using either a sacrificial anode or impressed current system.
- (d) "Cathodic protection tester" means an individual who is certified by NACE International or the International Code Council as having qualification in the measurements of cathodic protection of buried metal piping systems and tanks.
- (e) "Certified tank installer" means an individual who is certified by the International Code Council in underground storage tank system installation/retrofitting and certified as a qualified installer by the equipment manufacturer as being qualified in the installation of the manufacturer's equipment or individual system components.
- (f) "Certified tank remover" means an individual who is certified by the International Code Council in underground storage tank system decommissioning and has a knowledge of national underground storage tank regulations and industry standards.
- (g) "Compatible" means the ability of 2 or more substances to maintain their respective physical and chemical properties upon contact with one another for the design life of the tank system under conditions likely to be encountered in the underground storage tank system.
- (h) "Connected piping" means all piping, including valves, elbows, joints, flanges, fittings, and flexible connectors, attached to a tank or system through which regulated substances flow.
- (i) "Corrosion expert " means an individual who is either certified by NACE International or who is a registered professional engineer with certification or licensing that includes education and experience in corrosion control of buried metal piping systems and metal tanks.
 - (j) "Department" means the department of environmental services.
- (k) "Excavation zone" means the volume containing the tank system and backfill material bounded by the ground surface, walls, and floor of the pit and trenches into which the underground storage tank system is placed at the time of installation.
- (1) "Facility" means "facility" as defined in RSA 146-C:1, namely, "an assemblage of tanks, pipes, pumps, vaults, fixed containers, and appurtenant structures, singly or in any combination, which are used or designed to be used for the storage, transmission, or dispensing of oil or a hazardous substance, and which are within the size, capacity, and other specifications prescribed by rules adopted by the department pursuant to RSA 146-C:9, VI."
 - (m) "Heating oil" means petroleum as follows:
 - (1) No. 1;

- (2) No. 2;
- (3) No. 4-light;
- (4) No. 4-heavy;
- (5) No. 5-light;
- (6) No. 5-heavy;
- (7) No. 6-technical grades of fuel oil;
- (8) Other residual fuel oils;
- (9) Navy Special Fuel Oil;
- (10) Bunker C; and
- (11) Other fuels, excluding used oil, when used as substitutes for any of these fuel oils.
- (n) "Hydrostatic test" means a test designed to evaluate the tightness of an underground storage tank system component that is performed in accordance with manufacturer's requirements or nationally recognized industry codes of practice using pressure of liquid to test for tightness.
- (o) "Impressed current system" means a system that prevents corrosion to a metal surface by making the metal surface the cathode of an electrochemical cell, using a power source called a rectifier connected to buried metal anodes which are connected to the system surface by a wire.
- (p) "Leak monitoring" means the detection of a regulated substance before a release to the environment has occurred.
 - (q) "Lining" means a coating of a non-corrosive material bonded to the interior surface of a tank.
 - (r) "Liquid-tight" means no liquid can be released.
- (s) "Marina" means a waterfront facility whose principal use is the provision of available services such as the securing, launching, storing, fueling, servicing and repairing of watercraft.
 - (t) "Monthly" means once every calendar month.
- (u) "Motor fuel" means petroleum or a petroleum-based substance that is motor gasoline, aviation gasoline, jet fuel, diesel fuel, or any grade of gasohol, and which typically is used to fuel a motor engine.
- (v) "New underground storage tank site" means a parcel of land where no regulated underground storage tank system has existed and on which the installation of a system is proposed.
- (w) "Oil" means "oil" as defined in RSA 146-A:2,III, namely, "petroleum products and their by-products including, but not limited to, petroleum, fuel, sludge, crude and all other liquid hydrocarbons regardless of specific gravity. Notwithstanding the above, the term "oil" does not include natural gas, liquidifed petroleum gas or synthetic natural gas regardless of derivation or source."
 - (x) "Operate" means to store a regulated substance in an underground storage tank system.
- (y) "Operating day" means a 24-hour period in which any product has been put into or removed from the tank.

- (z) "Owner" means "owner" as defined in RSA 146-C:1,XIV, namely, "the person in possession of or having legal ownership of a facility. In addition, for facilities no longer in use "owner" includes the person having had legal ownership of such facility immediately prior to discontinuance of its use."
- (aa) "Pipe" means an impermeable hollow cylinder or tubular conduit that conveys or transports oil, liquid, or vapors, or that is used for venting, filling, or removal of oil or liquids.
- (ab) "Piping system" means all underground storage tank connected piping, pipe, pumps, monitor and secondary containment associated with the conveying, venting, filling or dispensing of a stored substance or vapors of the stored substance.
- (ac) "Pneumatic test" means a test designed to evaluate the tightness of an underground storage tank system component performed in accordance with the manufacturers' requirements or nationally recognized industry codes of practice using positive or negative gauge pressure of air to test for tightness.
- (ad) "Public water system" means "public water system" as defined by RSA 485:1-a, XV, namely, "a system for the provision to the public of piped water for human consumption, if such system has at least 15 service connections or regularly serves an average of at least 25 individuals daily at least 60 days out of the year. Such term includes (1) any collection, treatment, storage, and distribution facilities under control of the operator of such system and used primarily in connection with such system, and (2) any collection or pretreatment storage facilities not under such control which are used primarily in connection with such system. Any water system which meets all of the following conditions is not a public water system: (a) Consists only of distribution and storage facilities (and does not have any collection and treatment facilities); (b) Obtains all of its water from, but is not owned or operated by, a public water system; and (c) Does not sell water to any person."
- (ae) "Reconcile" means to compare the volume of stored regulated substance at the beginning of an inventory period with receipts, sales, and other uses during the inventory period, and with volume stored at the end of the inventory period, to determine whether there is any unaccounted gain or loss of regulated substance.
 - (af) "Regulated substance" means oil or a hazardous substance as defined in RSA 146-C:9, VI-a.
 - (ag) "Release detection" means determining whether a release of a regulated substance has occurred.
- (ah) "Repair(s)" means to fix or replace in kind an integral unit of piping of less than 25 feet or any existing defective or damaged part of an underground storage tank system to meet the requirements of Env-Wm 1401.
- (ai) "Sacrificial anode" means a system used which prevents corrosion to a metal tank surface by making the metal surface the cathode of an electrochemical cell, using zinc or magnesium anodes buried in the ground close to the metal surface that are connected to the tank surface by a wire.
- (aj) "Secondary containment" means a containment system such as a double-wall tank or a single-wall tank with a concrete vault that prevents regulated substance that has discharged or leaked from the primary containment system from impacting the land and waters of the state.
- (ak) "Significant modification" means any construction or alteration of a stage I or stage II system other than normal upkeep or maintenance as defined in Env-Wm 1404.
- (al) "Stage I or stage I system" means the stage I equipment installed such that gasoline vapors displaced from the gasoline storage tank are recovered and fed back into the cargo truck during product delivery.

- (am) "Stage II or Stage II system" means equipment installed at a gasoline dispensing facility such that gasoline vapors displaced from a motor vehicle fuel tank are recovered into the facility's gasoline storage tank during refueling of the motor vehicle, as defined in Env-Wm 1404.
- (an) "Substantial modification" means "substantial modification" as defined in RSA 146-C:1, XVI, namely, "the construction or installation of any addition to a facility or any restoration or renovation of a facility which: increases or decreases the on-site storage capacity of the facility; significantly alters the physical configuration of the facility; or impairs or improves the physical integrity of the facility or its monitoring systems. On-site abandonment is specifically excluded as a "substantial modification" of a facility."
- (ao) "Surface waters of the state" means "surface waters of the state" as defined by RSA 485-A:2, XIV, namely, "streams, lakes, ponds and tidal waters within the jurisdiction of the state, including all streams, lakes or ponds bordering on the state, marshes, water courses and other bodies of water, natural or artificial."
- (ap) "Tank" means a stationary device constructed of impermeable materials and designed to contain or hold regulated substances, which is a component of an underground storage tank system.
- (aq) "Underground storage tank facility" means "underground storage tank facility" as defined in RSA 146-C:1,XVIII, namely, "a facility or facility component that is 10 percent or more below the surface of ground and is not fully visible for inspection."
- (ar) "Underground storage tank system" or "system" means an underground storage tank(s) and all connected piping that routinely contains a regulated substance or vapors of the regulated substance.
- (as) "Used oil" means an oil which, through use or handling, has become unsuitable for its original purpose due to the presence of impurities or loss of original properties, but which still has sufficient liquid content to be free flowing.

Source. #6499, eff 4-24-97; ss by #8281, eff 2-3-05

Env-Wm 1401.04 Registration.

- (a) Pursuant to RSA 146-C:3, the owner of an underground storage tank facility shall register the facility with the department on registration forms provided by the department and shall provide information required by RSA 146-C:3, I and II and Env-Wm 1401.06.
- (b) Owners shall submit in writing to the department any change in facility status such as ownership and equipment within 10 days of the change. If there is a change in ownership of the facility, a new registration form shall be submitted to the department.
- (c) If facility ownership is disputed, the owner of the property on which the facility is located shall register the facility, shall be deemed to be the facility owner, and shall provide the information required by Env-Wm 1401.06.
- (d) For new systems or substantial modifications of existing systems, a new or amended registration form, respectively, shall be filed with the department at the time of final inspection of the system.
- (e) No person shall operate an underground storage tank facility that is not registered with the department.

Source. #6499, eff 4-24-97; ss by #8281, eff 2-3-05

Env-Wm 1401.05 <u>Change in Use</u>. The owner of any facility that would become subject to regulation under Env-Wm 1401 due to a change in the use of any system at the facility shall register the facility at least

30 days prior to changing the use of the system and shall comply with all applicable requirements before instituting the changed use.

Source. #6499, eff 4-24-97; ss by #8281, eff 2-3-05

Env-Wm 1401.06 Information Required for Registration.

- (a) In addition to the information required by RSA-146-C:3, the following shall be submitted to register each underground storage tank facility:
 - (1) The type of owner, such as federal government, state government, local government, commercial, or private;
 - (2) The type of facility, such as gas station, petroleum distributor, air taxi, aircraft owner, auto dealership, railroad, local government, state government, federal non-military, federal-military, commercial, industrial, contractor, trucking/transportation, utilities, farm or residential, or other;
 - (3) The number of tanks permanently closed, and the date of such closure for each tank;
 - (4) The number of tanks temporarily closed, and the date of such closure for each tank;
 - (5) Change in ownership;
 - (6) The certification of compliance as specified in (b), below; and
 - (7) Proof of financial responsibility as specified in Env-Wm 1401.10.
- (b) The owner shall agree to and sign the following: "I certify under penalty of law that I have personally examined and am familiar with the information submitted in this and all attached documents, and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate and complete."
- (c) The information required in (a) and (b), above shall be submitted on a registration form obtained from the department.

Source. #6499, eff 4-24-97; ss by #8281, eff 2-3-05

Env-Wm 1401.07 Permit to Operate.

- (a) As specified in RSA 146-C:4, I, no person shall operate an underground storage tank facility without a valid permit issued by the department.
- (b) The owner of an underground storage tank facility shall apply to the department for a permit to operate by providing the following:
 - (1) All information required for registration, specified in Env-Wm 1401.06;
 - (2) An underground storage tank system certification of compliance, signed by the owner, which states that the facility is in compliance with all applicable statutory and regulatory requirements;
 - (3) A stage I certification of compliance, in accordance with Env-Wm 1404; and
 - (4) A stage II certification of compliance in accordance with Env-Wm 1404.
- (c) A permit issued under this section shall be displayed in such a way as to be permanently affixed on the facility premises and visible to a department inspector.

- (d) The permit to operate shall be valid for a period of 5 years by maintaining compliance with these rules.
 - (e) The permit to operate shall apply to all underground storage tank systems at the facility.
- (f) If the department determines that a facility is not in compliance with applicable statutory and regulatory requirements, the department shall issue a notice of proposed license action to the owner, which includes all the information specified in Env-Wm 1401.09.
- (g) At least 60 days prior to the permit expiration date, the owner shall apply for permit renewal by providing the information required by Env-Wm 1401.07(b).
- (h) When a written request for a permit is received, the department shall determine the compliance status of the facility with respect to Env-Wm 1401 and Env-Wm 1404. The department shall also determine the compliance status of any Env-Wm 1403.07, .08, .13, .14, and .15 corrective action requirements, and any Env-Ws 412 regulated substance release response requirements. The department shall not issue a permit if the facility is not in compliance with all the requirements of Env-Wm 1403.07, .08, .13, .14, and .15 and Env-Ws 412. If the department has not determined the compliance status of the facility by the permit expiration date, and if the owner has applied to the department in accordance with the above, a permit shall be issued.
- (i) If a written request for a permit is not received by the department, the owner shall cease operating the facility no later than the permit expiration date, and the owner shall close all systems at the facility under Env-Wm 1401.17 or Env-Wm 1401.18.

Source. #6499, eff 4-24-97; ss by #8281, eff 2-3-05

Env-Wm 1401.08 Transfer of Facility Ownership.

- (a) When a transfer of ownership of any underground storage tank facility takes place, the new owner shall file an amended registration form with the department within 10 days of the transfer.
 - (b) The seller shall deliver to the buyer all documents and information related to the facility regarding:
 - (1) Inventory;
 - (2) Installations;
 - (3) Testing;
 - (4) Closure or removals;
 - (5) Lining;
 - (6) Monitoring;
 - (7) Sampling and analysis;
 - (8) Site assessments;
 - (9) Equipment maintenance;
 - (10) Repairs;
 - (11) Compliance history;
 - (12) Financial responsibility; and

(13) Any other records required to be maintained by these rules.

Source. #6499, eff 4-24-97; ss by #8281, eff 2-3-05

Env-Wm 1401.09 Permit to Operate: Suspension, Revocation, or Refusal to Renew.

- (a) If the department determines that a facility is not in compliance with applicable requirements, the department shall issue a notice of proposed license action to the owner.
 - (b) The notice of proposed license action shall state with specificity:
 - (1) The violations that the department believes exist at or relating to the facility;
 - (2) The action the department proposes to take, such as suspending, revoking, or refusing to renew the facility's permit to operate;
 - (3) That the owner has an opportunity for a hearing prior to a final decision being made; and
 - (4) That the owner may seek an informal disposition of the matter through discussions with the department.
- (c) If the matter goes to a hearing and the facility owner is aggrieved by the final decision of the matter, the owner may appeal to the waste management council in accordance with RSA 146-C:4, I, within 20 days of the date of issuance of the final decision.

Source. #6499, eff 4-24-97; ss by #8281, eff 2-3-05

Env-Wm 1401.10 Financial Responsibility.

- (a) Owners of underground storage tank facilities for oil shall maintain financial responsibility for costs associated with the cleanup of releases from systems, the implementation of corrective measures, and compensation for third party damages in the amount equal to or greater than \$1,000,000 per occurrence.
- (b) The amount of financial responsibility required shall not limit an owner's or operator's liability for damages caused by a release.
- (c) The requirement for financial responsibility shall be satisfied if the owner of a facility is eligible for reimbursement of costs associated with cleanup of releases from systems, under RSA 146-D.

Source. #6499, eff 4-24-97; ss by #8281, eff 2-3-05

Env-Wm 1401.11 Inventory Monitoring.

- (a) The operator of an underground storage tank facility shall conduct inventory monitoring of each underground storage tank, and shall maintain separate records for each tank and interconnected system.
 - (b) An underground storage tank system shall be exempt from inventory monitoring when:
 - (1) The secondary containment of the underground storage tank is continuously monitored for both regulated substance and water; or
 - (2) The underground storage tank contains Bunker C, no. 4, no. 5, or no. 6 fuel oil.
- (c) Operators of suction, return, or pressurized piping without secondary containment and leak monitoring for on-premise-use heating oil underground storage tanks shall perform the following;

- (1) A piping tightness test once every 3 years in accordance with the piping manufacturer's requirements or nationally recognized industry codes of practice; and
- (2) Submit piping test results of (c)(1) above, to the department within 30 days of the date of the test.
- (d) When piping fails a piping tightness test as described by the method used in Env-Wm 1401.11(c)(1) above, the piping shall:
 - (1) Be permanently closed in accordance with Env-Wm 1401.18: or
 - (2) Be addressed pursuant to Env-Wm 1401.38.
- (e) When the cause of the piping test failure as described by the method used in Env-Wm 1401.11(c)(1) is unknown or there is a possible release to the environment, the owner shall notify the department within 24 hours of the occurrence in accordance with Env-Ws 412.
- (f) A piping test shall not be required for on-premise-use heating oil tanks having suction or atmospheric piping without secondary containment and leak monitoring when it is demonstrated, by department inspection or by plans submitted by the owner, to be designed and constructed to meet the following standards:
 - (1) The piping operates at atmospheric pressure or at less than atmospheric pressure;
 - (2) The piping is continuously sloped so that the contents of the piping will drain back into the storage tank if the suction is released;
 - (3) No more than one check valve is included in each suction line; and
 - (4) The check valve is located directly below and as close as practical to the suction pump.
- (g) Operators of single wall underground storage tanks containing motor fuel or bulk storage fuel oil shall perform the following:
 - (1) The operator shall reconcile inventory data daily and monthly;
 - (2) Measure the liquid stored using:
 - a. A gauge stick which shall be capable of measuring the level of liquid in the tank to the nearest 1/8 inch; or
 - b. An automatic tank gauging device of equivalent or better measuring accuracy;
 - (3) Notify the department within 24 hours if any of the following occurs:
 - a. The water in the tank changes by 2 inches or more over one month or any shorter period;
 - b. Any tank contains a total water depth of 3 inches or more; or
 - c. The monthly reconciled inventory records show an unexplained gain or loss of regulated substance greater than 1.0 percent of the pump meter reading plus 130 gallons;
 - (4) Maintain all records relating to inventory monitoring, including sales receipts for a period of 3 years; and

- (5) Perform a tightness test, pursuant to Env-Wm 1401.13, on any system with an unexplained gain or loss of regulated substance greater than 1.0 percent of the pump meter reading plus 130 gallons, or with a change in water level of 2 inches or more in any one month, or total water depth of 3 inches or more.
- (h) Inventory records for single wall underground storage tanks containing motor fuel or bulk storage fuel oil shall be recorded on a motor fuel and bulk storage fuel oil inventory form obtained from the department or another representative motor fuel and bulk storage fuel oil inventory form that processes all required data noted in Env-Wm 1401.11(i) using an automatic tank gauge monitor and computer software utilized by the facility owner for each system.
- (i) The motor fuel and bulk storage fuel oil inventory form obtained from the department or another representative motor fuel and bulk storage fuel oil inventory form shall include the following:
 - (1) Facility registration number;
 - (2) Tank system number and volume;
 - (3) The type of substance being stored;
 - (4) Measurement of the tank contents in gallons before each delivery;
 - (5) Measurement of the tank contents in gallons after each delivery;
 - (6) Delivery amount in gallons;
 - (7) Total liquid gallons of sales or uses for each operating day;
 - (8) Measurement in gallons of liquid stored for each operating day;
 - (9) Monthly measurement in inches of water level;
 - (10) Daily loss or gain of product in gallons for each operating day;
 - (11) Total monthly gallons of loss or gain of product;
 - (12) Total monthly liquid gallons of sales or use;
 - (13) Monthly maximum gain or loss in product allowed by the department before notification is required; and
 - (14) Operator signature certifying the accuracy of the monthly inventory records.
- (j) Operators of on-premise-use heating oil single wall underground storage tanks that are not exempt under Env-Wm 1401.02(b) or emergency generator single wall underground storage tanks shall perform inventory monitoring by annual tank gauging in accordance with the following requirements:
 - (1) The tank shall be filled to the maximum level allowed by the primary overfill prevention device:
 - (2) Tank oil and water level measurements shall be recorded at the beginning and end of an idle period of at least 30 days, during which no oil shall be added to or removed from the tank;
 - (3) All measurements shall be based on an average of at least 2 consecutive readings; and

- (4) The measurement equipment used shall be capable of measuring the level of oil over the full range of the tank's height to the nearest 1/8 of an inch.
- (k) If the results of annual tank gauging indicate a change of water level of 2 inches or more, or a loss or gain of oil, the owner shall notify the department within 24 hours.
- (1) A tightness test shall be performed, pursuant to Env-Wm 1401.13, on any on-premise-use heating oil or emergency generator single wall underground storage tank system with an unexplained gain or loss of oil, or a total water depth of 3 inches.
- (m) Release detection methods specified in Env-Wm 1401.29 and .30 or a tightness test specified in Env-Wm 1401.13 that monitors the single wall portion of an underground storage tank system, may be substituted for annual tank gauging.
- (n) Inventory records for annual tank gauging for on-premise-use heating oil or emergency generator single wall underground storage tanks shall be recorded on an on-premise-use heating oil and emergency generator inventory form obtained from the department, or on another representative on-premise-use heating oil emergency generator inventory form.
- (o) The on-premise-use heating oil and emergency generator inventory form obtained from the department or another representative on-premise-use heating oil and emergency generator inventory form shall include the following:
 - (1) Facility registration number;
 - (2) Tank system number and volume;
 - (3) The type of substance being stored;
 - (4) Measurement in inches of water and product with the date taken; and
 - (5) Operator signature certifying the accuracy of the annual tank gauging records.
- (p) The owner shall maintain all records relating on-premise-use heating oil and emergency generator to on-premise-use heating oil and emergency generator inventory monitoring for a period of 3 years.
- (q) When annual tank gauging is substituted by release detection or tightness testing as specified in Env-Wm 1401.29, .30 and .13 is used for inventory monitoring, the records for inventory monitoring shall include all of the reporting requirements specified in Env-Wm 1401.29, .30 and .13.
- (r) Operators of used oil single wall underground storage tanks shall perform inventory monitoring by monthly tank gauging in accordance with the following requirements:
 - (1) Tank oil and water level measurements shall be recorded at the beginning and end of an idle period of at least 36 hours, during which no oil shall be added to or removed from the tank;
 - (2) All measurements shall be based on an average of at least 2 consecutive readings; and
 - (3) The measurement equipment used shall be capable of measuring the level of oil over the full range of the tank's height to the nearest 1/8 of an inch.
- (s) If the results of the monthly tank gauging indicate a change in water level, or a loss or gain of oil, the owner shall notify the division within 24 hours.

- (t) A tightness test shall be performed, pursuant to Env-Wm 1401.13, on any used oil single wall underground storage tank system with an unexplained gain or loss of oil, or an unexplained change in water level.
- (u) Release detection methods specified in Env-Wm 1401.29 and .30 or a tightness test specified in Env-Wm 1401.13 that monitors the single wall portion of an underground storage tank system may be substituted for monthly tank gauging.
- (v) Inventory records for used oil single wall underground storage tanks shall be recorded on an used oil inventory form obtained from the department, or another representative used oil inventory form.
- (w) The used oil inventory form obtained form the department or another representative used oil inventory form shall include the following:
 - (1) Facility registration number;
 - (2) Tank system number and volume;
 - (3) The type of substance being stored;
 - (4) Measurement in inches of water and product with the date and time taken; and
 - (5) Operators signature certifying the accuracy of the monthly tank gauging records.
- (x) The owner shall maintain all records relating to used oil inventory monitoring for a period of 3 years.
- (y) When monthly tank gauging is substituted by release detection or tightness testing as specified in Env-Wm 1401.29, .30 and .13 for inventory monitoring, the records for inventory monitoring shall include all of the reporting requirements specified in Env-Wm 1401.29, .30 and .13.
- (z) When the department has determined that inventory monitoring was not conducted, the owner shall perform a tightness test in accordance with Env-Wm 1401.13 on any underground storage tank system for which inventory monitoring has not been performed within 30 days of the determination.

Source. #6499, eff 4-24-97; ss by #8281, eff 2-3-05

Env-Wm 1401.12 Regulated Substance Transfers.

- (a) The facility owner or product distributor shall not allow transfer of regulated substances to be made to any facility that is not registered and which does not have a current permit to operate.
- (b) Immediately prior to transferring any regulated substance into a tank, the owner, operator, or product distributor shall determine that the tank has sufficient receiving capacity to hold the volume to be transferred.
- (c) No transfer shall be made to a tank that is not equipped with spill and overfill protection devices, as required by Env-Wm 1401.25.
- (d) No transfer shall be made to a tank that is not equipped with a stage I system as required by Env-Wm 1404.

Source. #6499, eff 4-24-97; ss by #8281, eff 2-3-05

Env-Wm 1401.13 Tightness Testing.

- (a) The tank tightness testing protocol or method shall be tested and certified by an independent testing laboratory and shall be certified by the laboratory to meet the leak rate detection criteria of (e), below. A complete description of the method or protocol and a copy of the certification shall be filed with the owner. The owner shall retain the description and certification for the life of the facility.
- (b) When a tightness test is performed, the owner shall send a tightness test report to the department no later than 30 days after the date of the test.
 - (c) The tightness test report shall include:
 - (1) The facility registration and tank system number;
 - (2) System location;
 - (3) The name, address and telephone number of the system owner;
 - (4) Tank capacity;
 - (5) The age of the tank;
 - (6) Product stored;
 - (7) Location of each system tested;
 - (8) A copy of field technician's testing records;
 - (9) Any other information to accurately identify each system;
 - (10) A statement specifying that the piping was also tested;
 - (11) A description of any piping, fittings, or connections that were tightened or repaired;
 - (12) The length of any waiting periods after product delivery, topping, or vapor space disturbances;
 - (13) A description of the temperature measurement equipment and method used for the tightness test;
 - (14) A description of the releveling procedure used;
 - (15) The date of last calibration and maintenance of tightness testing equipment;
 - (16) Test duration time; and
 - (17) A description of the vapor pocket measurement and elimination procedure used.
 - (d) The technician performing the test shall sign a test report that certifies:
 - (1) The validity, method, and accuracy of the test;
 - (2) That the test complies with requirements of these rules; and
 - (3) That he or she is qualified to perform the test.
- (e) The tightness test shall be capable of detecting a system leak rate of 0.10 gallon per hour with a probability of detection of 0.95 and a probability of false alarm of 0.05, accounting for all variables including

vapor pockets, thermal expansion of product, temperature stratification, evaporation, pressure, end deflection, water table, and tidal action.

- (f) A leak or failure shall be indicated by a test result of 0.10 gallon per hour or greater or an inconclusive test result.
- (g) The test report and other documents describing the type of test, contractor, date, materials, all technician testing data and any other information pertinent to the work performed under this section shall be kept by the owner for the life of the system.
- (h) If information submitted to the department causes the department to question the accuracy of the test, the person conducting tank tightness tests shall provide the department with information on all testing equipment and protocols which have the potential to affect the accuracy of the test within 10 days of the department requesting the information.

Source. #6499, eff 4-24-97; ss by #8281, eff 2-3-05

Env-Wm 1401.14 Certification of Technicians Performing Tightness Tests.

- (a) Any person conducting tank tightness tests shall have an understanding of the variables which affect the test, be trained in the performance of the test, and be certified as qualified by the manufacturer of the equipment used in the testing protocol or method. The technician shall submit the training certificate from the manufacturer to the department.
- (b) Any person conducting tank tightness tests shall keep current the manufacturer's certification and registration with the department.

Source. #6499, eff 4-24-97; ss by #8281, eff 2-3-05

Env-Wm 1401.15 Tightness Test Failures.

- (a) The person conducting the tightness test shall notify the department and the facility owner and operator immediately of a system tightness test failure, as defined in Env-Wm 1401.13(f).
- (b) The owner of an underground storage tank system shall report any failure to the department within 24 hours of receiving notice of the failure.
 - (c) A tightness test failure shall be addressed as follows:
 - (1) The owner shall perform an investigation into the cause of the failure to determine if the system is leaking;
 - (2) The investigation into the cause of an initial test failure shall be completed within 7 days;
 - (3) The investigation into the cause of an initial test failure shall include the performance of a second confirming tank tightness test; and
 - (4) The owner shall submit a written report to the department within 30 days of the failure that describes the work performed, the repairs made, and any other actions taken in response to the test failure.
- (d) Any system that has been repaired shall be retested for tightness to confirm the effectiveness of the repairs.

- (e) The owner may temporarily close the system within 7 days of the initial failure and permanently close the system in accordance with Env-Wm 1401.18 within 30 days of the original test failure instead of conducting an investigation in accordance with (c) (2), (3) and (d), above into the cause of the failure.
- (f) Any single wall underground storage tank system which fails the second confirming test for tightness shall be completely emptied of regulated substance within 24 hours of the second failure and permanently closed, in accordance with Env-Wm 1401.18 within 30 days.
- (g) Any double wall underground storage tank system in which the outer wall fails a second confirming test for tightness shall be completely emptied of regulated substance within 24 hours of the second failure and permanently closed, in accordance with Env-Wm 1401.18 within 30 days.

Source. #6499, eff 4-24-97; ss by #8281, eff 2-3-05

Env-Wm 1401.16 Unusual Operating Conditions.

- (a) The owner shall report any unusual system operating conditions to the department within 24 hours, unless the cause is immediately determined and corrected, and the owner determines that the unusual operating condition did not result in a release of a regulated substance.
 - (b) Unusual system operating conditions that require reporting shall include:
 - (1) Erratic behavior of dispensing equipment;
 - (2) An increase of 2 inches or more of water in a tank over any 30 day or shorter period or a total water depth of 3 inches or more;
 - (3) An indication by a monitoring system of a possible leak;
 - (4) The presence near the facility of petroleum vapors or vapors of a hazardous substance; and
 - (5) Erratic behavior of the stage I or stage II system, as defined in Env-Wm 1404.
- (c) The owner shall initiate an investigation into the cause of any unusual system operating conditions within 24 hours of the occurrence of the condition and shall submit a written report within 7 days to the department delineating the investigation and its conclusions.
- (d) If unusual operating conditions occur as in (b), above, the owner shall conduct a tightness test in accordance with Env-Wm 1401 and Env-Wm 1404 requirements to determine the tightness of the affected system(s) within 7 days of being notified by the department that the test is required.

Source. #6499, eff 4-24-97; ss by #8281, eff 2-3-05

Env-Wm 1401.17 Temporary Closure.

- (a) Temporary closure of underground tank storage systems shall be accomplished by removing all substances from the system so that no more than one inch of residue remains in the tank. All substances removed shall be handled and disposed of in accordance with applicable local, state, and federal rules. All openings, such as fill risers, shall be equipped with a lock to secure against unauthorized use or tampering.
- (b) Within 30 days of temporary closure, the owner shall submit a new registration form to the department indicating that the requirements of this section for temporary closure of the system have been met.
- (c) Any portion of a single wall underground storage tank system without secondary containment and leak monitoring which has been temporarily closed for more than 12 months shall be permanently closed in accordance with Env-Wm 1401.18 within 30 days.

- (d) A single wall underground storage tank or a single wall piping without secondary containment and leak monitoring, which has been temporarily closed for less than 12 months, shall not be placed back into service nor shall a regulated substance be introduced into the system until the owner complies with and certifies to the department that the system is in compliance with Env-Wm 1401.04, Env-Wm 1401.07, Env-Wm 1401.10, Env-Wm 1401.25, Env-Wm 1401.29, Env-Wm 1401.30, Env-Wm 1401.32, and Env-1401.33 and Env-Wm 1404 requirements.
- (e) A double wall underground storage tank system with secondary containment and leak monitoring, which has been temporarily closed for more than 90 days, shall not be placed back into service nor shall a regulated substance be introduced into the system until the owner complies with and certifies to the department that the system is in compliance with Env-Wm 1401.04, Env-Wm 1401.07, Env-Wm 1401.10, Env-Wm 1401.25, Env-Wm 1401.26, Env-Wm 1401.27, Env-Wm 1401.32, Env-Wm 1401.33 and Env-Wm 1404.
- (f) Systems with cathodic protection that are temporarily closed shall comply with Env- Wm 1401.32 (c) and Env- Wm 1401.33.

Source. #6499, eff 4-24-97; ss by #8281, eff 2-3-05

Env-Wm 1401.18 Permanent Closure.

- (a) With the exception of vent piping, all regulated metal underground storage tank systems without corrosion protection shall be permanently closed.
- (b) All hazardous substance underground storage tank systems without secondary containment and leak monitoring shall be permanently closed.
- (c) With the exception of vent piping, any part of an existing single wall underground storage tank system that routinely contains regulated substance without secondary containment and leak monitoring shall be permanently closed by December 22, 2015.
- (d) When an existing, previously unknown, underground storage tank system which is subject to Env-Wm 1401 is discovered, the owner shall register the facility in accordance with Env-Wm 1401.04, and within 60 days from registration, close the tank system in accordance with Env-Wm 1401.18.
- (e) The owner shall notify the department at least 30 days prior to any scheduled underground storage tank system permanent closure.
- (f) Any person permanently closing a system shall be certified in underground storage tank decommissioning by the International Code Council. The certified tank remover shall also comply with safety and testing requirements such as described in the American Petroleum Institute publications: RP 1604, Closure of Underground Petroleum Storage Tanks, RP 1631, Interior Lining and Periodic Inspection of Underground Storage Tanks, and STD 2015, Requirements for Safe Entry and Cleaning of Petroleum Storage Tanks.
 - (g) Permanent closure shall be accomplished as follows:
 - (1) All product, liquid and sludge shall be removed from the system(s) and disposed of in accordance with applicable state and federal rules;
 - (2) After all substances have been removed from the system(s) all piping shall be:
 - a. Disconnected and removed; or

- b. Disconnected and removed to the greatest extent possible and permanently capped or plugged;
- (3) The system shall be tested for hazardous or explosive vapors and rendered vapor free or inerted of such vapors;
- (4) The system shall be removed;
- (5) If removal of an underground storage tank system would serve to undermine the integrity of an overlying structure(s), or compromise the structural integrity of an adjacent underground storage tank system, then the underground storage tank system may be permanently closed in placed;
- (6) A tank that is closed in place shall be filled to capacity, including all voids within each tank, with a solid inert material;
- (7) An assessment shall be performed to determine if any contamination is present using one of the following sampling methods:
 - a. Test pits shall be excavated in the immediate vicinity of the system, and representative soil and, when encountered, groundwater samples shall be obtained;
 - b. Soil and, when encountered, groundwater samples shall be obtained from the excavation resulting from the removal of the system;
 - c. Existing release detection devices or subsurface monitoring locations shall be sampled;
 - d. For tanks which will be closed in-place, soil and, when encountered, groundwater samples shall be obtained at representative locations from beneath the tank and around all system piping; or
 - e. Soil and groundwater samples shall also be taken at locations adjacent to the system piping;
- (8) The assessment shall be conducted in accordance with Env-Wm 1403 and Env-Ws 412.
- (9) The excavation where the underground storage tank systems were located shall be screened for the presence of contamination, and samples shall be collected and shall be submitted to a New Hampshire certified laboratory for analysis, as follows:
 - a. Field screening of samples shall include visual and olfactory observation and headspace analysis performed with equipment such as a portable organic vapor meter (OVM) or portable gas chromatograph (GC); and
 - b. Laboratory analysis of samples shall include tests for constituents of those substances stored in the system; and
- (10) A closure report containing results performed under (7), (8) and (9), above and the laboratory analysis of samples performed under (9), above shall be submitted to the department within 30 days of the samples being taken.
- (h) If soil or groundwater contamination from a regulated substance is detected by observation or analysis during closure of an underground storage tank system, any responsible party or other person shall immediately notify the department in accordance with RSA 146-A:5, II.

- (i) The excavation shall not be backfilled, nor shall the closed tank be removed from the site until the department has inspected the site. If the department is unable to inspect the site within 7 days, the department shall grant permission for a consultant or other person knowledgeable in site assessments for contamination to inspect the site. When such permission is granted, the person inspecting the site shall submit a report to the department. The report shall contain a detailed account of inspection of soil and groundwater in the vicinity of the tank and piping, and of an inspection of the closed tank for evidence of corrosion and leakage, and be submitted within 30 days of such inspection.
- (j) Documents pertaining to the closure of the tank or system, including contractor's invoices, manifests for disposal of materials, testing and analytical reports, and any other documents generated from the closure shall be kept by the owner for 3 years. These documents shall be transferred to the new owner at the time of a transfer of facility ownership.

Source. #6499, eff 4-24-97; ss by #8281, eff 2-3-05

Env-Wm 1401.19 Prohibition Against Reusing Tanks.

- (a) As specified in RSA 146-C:8:
 - (1) Underground storage tanks that have been removed and do not meet the requirements of Env-Wm 1401.21 shall not be reused as underground storage tanks for regulated substances.
 - (2) An underground storage tank once used for regulated substances shall not be reused to store food products or water.
- (b) All double-wall tanks that have been removed shall be recertified by the tank manufacturer and shall comply with Env-Wm 1401.21 regarding tank standards for new underground storage tank systems prior to use as underground storage tanks for regulated substances.

Source. #6499, eff 4-24-97; ss by #8281, eff 2-3-05

Env-Wm 1401.20 Requirements for Approval of Underground Storage Systems.

- (a) At least 90 days prior to commencing construction or installation of a new or replacement underground storage tank system, or a substantial modification of an underground storage tank system, the owner shall submit plans, a completed application provided by the department, and specifications as required by RSA 146-C:7, I with the fee required by RSA 146-C:7, I-a to the department. The plans shall be prepared and stamped by a New Hampshire licensed professional engineer.
- (b) Within 90 days of submission of plans and specifications, the department shall approve plans that demonstrate compliance with the requirements of these rules, or issue a notice of incompleteness or disapproval for plans that do not demonstrate compliance with these rules.
- (c) As specified in RSA 146-C:7, II, an owner shall not cause or allow a change which is not in accordance with the approved plans and all terms and conditions of the department's approval.
- (d) An approval granted for construction or installation of a corrosion prevention system, or a new or replacement underground storage tank system, or a substantial modification of an underground storage tank system shall be valid for one year from the date of issuance. If construction of the installation is not completed within one year, the approval shall be void.

Source. #6499, eff 4-24-97; ss by #8281, eff 2-3-05

Env-Wm 1401.21 Tank Standards for New Underground Storage Systems.

- (a) Pursuant to 40 CFR 280.20(a)(1), all glass-fiber-reinforced plastic underground storage tanks designed for storing regulated substances shall be manufactured in accordance with:
 - (1) Standards of Underwriters Laboratories Inc., UL 1316, Standard for Glass-Fiber-Reinforced Plastic Underground Storage Tanks for Petroleum Products, Alcohols, and Alcohol-Gasoline Mixtures; or
 - (2) Underwriters Laboratories' of Canada, ULC-S615-1998, Underground Reinforced Plastic Tanks.
- (b) All double-wall steel underground storage tanks designed for storing regulated substances shall be manufactured with outer jackets of a minimum of 10 gauge in thickness and in accordance with Underwriters Laboratories Inc., UL 58, Standard for Steel Underground Tanks for Flammable and Combustible Liquids.
- (c) All composite underground storage tanks designed for storing regulated substances shall be manufactured in accordance with Underwriters Laboratories Inc., UL 1746, Standard for External Corrosion Protection Systems for Steel Underground Storage Tanks, Steel Tank Institute Specifications, ACT-100, External Corrosion Protection of FRP Composite Steel Underground Storage Tanks, or ACT 100-U, External Corrosion Protection of Composite Steel Underground Storage Tanks.
- (d) All underground storage tanks designed for storing regulated substances and constructed of steel shall be manufactured in accordance with one of the following standards:
 - (1) Underwriters' Laboratories of Canada, CAN/ULC-S603-1992, Underground Steel Tanks; or
 - (2) Underwriters Laboratories, Inc., UL 58, Standard for Steel Underground Tanks for Flammable and Combustible Liquids; or
 - (3) Pressure Vessels; Section VIII, Division I, of the American Society of Mechanical Engineers, ASME Boiler and Pressure Vessel Code.
- (e) All jacketed underground storage tanks designed for storing regulated substances shall be manufactured in accordance with Underwriters Laboratories Inc., UL 1746, Part III, Standard for External Corrosion Protection Systems for Steel Underground Storage Tanks or Underwriters' Laboratories of Canada, ORD-C58.10-1992, Underground Jacketed Steel Tanks.
- (f) All tanks shall be provided with secondary containment that shall enclose 360 degrees of the inner tank.
- (g) The secondary containment wall or envelope shall not be in contact with the inner wall such that a leak of the inner tank would not be detected due to restriction of product flow to the monitoring sump.
- (h) No alterations of any kind shall be made to the tank without the tank manufacturer's written approval.
- (i) All new tanks shall have a wear plate constructed of steel or glass fiber reinforced plastic installed under each tank opening covering an area of at least 144 square inches for purposes of protecting the tank wall from abrasion or puncture.
- (j) New underground storage tanks shall bear a stencil, label or plate that provides the following information:
 - (1) The standard of design by which the tank was manufactured;
 - (2) The year in which the tank was manufactured;

- (3) The dimensions and capacity of the tank; and
- (4) The name of the manufacturer.
- (k) A certificate which shows all of the information required by (j), above and which also shows the date of installation and the regulated substances and percentages by volume of any additives which may be stored permanently and compatibly within, shall be displayed in such a way as to be visible to a department inspector and permanently affixed on the facility premises.
- (l) Documents or copies of documents describing manufacturer's warranties, equipment items, contractor, equipment maintenance, repairs or testing, and all other information pertinent to the tank installation and system components shall be kept at the facility for the life of the system(s). These records shall be transferred to the new owner at the time of a transfer of facility ownership.
- (m) The regulated substance stored shall be compatible with the interior lining or wall of the tank and all components, gaskets, and sealants that will be in contact with the stored substance. If the regulated substance stored is changed to a regulated substance that is not listed by the manufacturer as a substance that is compatible with the tank, a written confirmation from the manufacturer shall be obtained certifying the compatibility of the liquid with the system, prior to the change.

Source. #6499, eff 4-24-97; ss by #8281, eff 2-3-05

Env-Wm 1401.22 Piping Standards for New Underground Storage Tank Systems.

- (a) All new underground pipes, fittings, and connections shall be constructed of fiberglass-reinforced epoxy, thermoplastic material extrusions, steel or copper and shall comply with the American Society of Mechanical Engineers, B31.3, Process Piping, and B 31.4, Pipeline Transportation Systems for Liquid Hydrocarbons and Other Liquids.
- (b) Fiberglass-reinforced epoxy piping shall meet ASTM D-2996-01, Standard Specification for Filament-Wound Fiberglass (Glass-Fiber-Reinforced Thermosetting -Resin) Pipe, Underwriters Laboratories Inc., UL 971, Standard for Nonmetallic Underground Piping for Flammable Liquids or Underwriters' Laboratories of Canada, ORD-C107.7-1993, Glass- Fibre Reinforced Plastic Pipe and Fittings. Ultimate sheer strength of adhesive and curing agent shall be in compliance with ASTM D-2517- 00e1, Standard Specification for Reinforced Epoxy Resin Gas Pressure Pipe and Fittings, as approved and supplied by manufacturer.
- (c) Thermoplastic extrusion flexible piping shall meet Underwriters Laboratories Inc., UL 971, Standard for Nonmetallic Underground Piping for Flammable Liquids.
 - (d) Steel primary product piping shall be Schedule 40 or heavier.
- (e) Except when cathodic protection is provided by impressed current, underground metal piping systems shall have di-electric bushings installed to electrically isolate the piping system from the tank and the dispenser, or other end-use point, and at any change in the metal type, such as at flexible connectors.
- (f) Piping systems shall provide flexibility for movement at the tank end, dispenser end, and at piping direction changes to relieve stress.
- (g) When metal pipe is totally isolated from water and/or soil or other backfill material via non-metallic secondary containment, cathodic protection of the piping shall not be required.
- (h) All new underground piping systems shall be designed, constructed, and installed with access and isolation points to permit independent pressure testing of the tank and piping without the need for excavation.

- (i) Pressure and temperature limitations shall meet American Society of Mechanical Engineers, B31.3 Process Piping, B31.4, Pipeline Transportation Systems for Liquid Hydrocarbons and Other Liquids, or the manufacturer's requirements and recommendations.
- (j) The piping system and all components, gaskets, sealants that will be in contact with the stored substance shall be compatible with the stored substance.

Source. #6499, eff 4-24-97; ss by #8281, eff 2-3-05

Env-Wm 1401.23 Secondary Containment for New Tanks.

(a) All secondary containment access ports shall be installed to permit access without the need for excavation and shall be protected against unauthorized access and tampering.

Source. #6499, eff 4-24-97; ss by #8281, eff 2-3-05

Env-Wm 1401.24 Secondary Containment for New Piping Systems.

- (a) With the exception of vent piping, all underground storage piping systems that routinely contain regulated substances shall have secondary containment by utilizing double-wall piping.
- (b) Piping systems shall continuously slope at a minimum of 1/8 inch per foot to direct any leakage from the primary piping to a liquid-tight piping sump with a piping sump sensor. The piping sump shall be installed at each tank.
- (c) A liquid-tight dispenser sump shall be installed directly beneath each dispenser to contain discharges. Dispenser sumps shall be provided with continuous leak detection monitoring by the piping sump sensor or the dispenser sump shall be equipped with a sump sensor.
- (d) All remote fill pipes shall comply with (a) and (b), above, Env-Wm 1401.25 and Env-Wm 1401.27 (a) and (c).
- (e) Piping systems installed for the purpose of siphoning regulated substances shall be equipped with a liquid-tight piping sump and piping sump sensor at all interconnected tanks.
 - (f) All piping and dispenser sumps shall be maintained free of liquid and debris.
- (g) All piping and dispenser sumps shall be liquid-tight to contain liquids and shall be installed to prevent the intrusion of groundwater or surface water runoff.
- (h) All piping and dispenser sumps shall be equipped with liquid-tight penetration fittings for all sump entries.
- (i) All piping and dispenser sump sensors shall be installed to respond to small accumulations of liquids within the sumps. The sensors shall be installed in accordance with the manufacturer's requirements for installation.

Source. #6499, eff 4-24-97; ss by #8281, eff 2-3-05

Env-Wm 1401.25 Spill Containment and Overfill Protection.

(a) All underground storage tanks shall be equipped with spill containment and overfill protection devices.

- (b) Liquid-tight spill containment equipment shall prevent the release of product to the environment when a transfer hose is detached from a fill or transfer pipe.
- (c) All spill containment equipment installed on an existing or new underground storage tank system shall:
 - (1) Have a minimum liquid capacity of 5 gallons;
 - (2) Be installed to prevent product from entering the backfill surrounding the spill containment equipment; and
 - (3) Be installed in accordance with the manufacturer's requirements and be maintained in good working order to perform their original design function.
 - (d) Spill containment equipment shall be maintained free of liquid and debris.
- (e) Spill containment equipment installed with drain valves on underground storage tank systems that store gasoline shall have the valve replaced annually or permanently sealed.
- (f) All spill containment equipment shall be maintained to be liquid tight and be tested for tightness at installation using the manufacturer's requirements or nationally recognized industry codes of practice. The person performing the test shall certify and submit the passing test results to the owner within 30 days of the test.
- (g) A primary overfill protection device shall be installed to restrict or stop the flow of a regulated substance during a delivery before the tank reaches full capacity so that none of the fittings located on the top of the tank are exposed to the regulated substance due to overfilling.
- (h) The primary overfill protection device installed on an existing or new underground storage tank system:
 - (1) Shall alert the transfer operator when the tank is no more than 90% full by restricting the flow into the tank or by triggering a high level visual and audible alarm; or
 - (2) When gravity filling a tank, shall alert the transfer operator 30 minutes prior to overfilling by restricting flow to an ultimate rate of 5 gallons per minute; or
 - (3) Shall automatically and completely shut off flow into the tank when the tank is no more than 95% full.
- (i) All new and replacement overfill protection devices shall be installed to allow access for inspection of proper operation.
- (j) All new underground storage tank systems utilizing suction piping and an air eliminator shall be equipped with a high level visual and audible alarm or with a device that shall automatically and completely shut off flow into the tank, as specified in (h) above. Within one year of the 2005 effective date of these rules, existing underground storage tank systems shall comply with this rule.
- (k) All new high level alarms shall have both visual and audible alarms and shall be clearly labeled as a tank overfill alarm. The alarm shall be clearly visible and audible to the transfer operator.
- (1) When product is pumped to a new underground storage tank system, the system shall only be equipped with a high level visual and audible overfill alarm. Within one year of the 2005 effective date of these rules, existing underground storage tank systems shall comply with this rule.

- (m) All new underground storage tank systems that receive a delivery without a tight fill connection shall only be equipped with a high level visual and audible overfill alarm. Within one year of the 2005 effective date of these rules, existing underground storage tank systems shall comply with this rule.
- (n) All gauges, alarms, or automatic or mechanical devices associated with overfill protection shall be compatible with the delivery procedures and installed in accordance with the manufacturer's requirements and maintained in good working order to perform their original design function.

Source. #6499, eff 4-24-97; ss by #8281, eff 2-3-05

Env-Wm 1401.26 <u>Leak Monitoring for New Tanks</u>.

- (a) Leak monitoring shall be installed and continuously operated for all new tanks.
- (b) Double-wall tanks shall have continuous monitoring of the interstitial space for both the regulated substance and water.
- (c) The sensors associated with leak monitoring for new and existing tanks shall be installed in accordance with the manufacturer's requirements for installation and maintained in good working order to perform their original design function.
 - (d) The interstitial space shall be free of debris, water and the regulated substance.

Source. #6499, eff 4-24-97; ss by #8281, eff 2-3-05

Env-Wm 1401.27 <u>Leak Monitoring for New Underground Piping Systems</u>.

- (a) Underground piping systems shall be equipped with a leak monitoring system.
- (b) A UL-listed line leak detector shall be employed on pressurized piping systems, which shall be capable of detecting a line leakage rate of 3 gallons per hour at 10 pounds per square inch, and shall shut-off or restrict product flow if the leakage rate is exceeded. The UL-listed line leak detector shall meet the requirements of 40 CFR 280.40(a)(3).
- (c) The interstitial space of the double wall piping or the annular space between the primary piping and the secondary containment system shall be continuously monitored to detect the presence of both water and the regulated substance.
- (d) The piping sump shall have a leak monitor sensor to detect the presence of water and the regulated substance.

Source. #6499, eff 4-24-97; ss by #8281, eff 2-3-05

Env-Wm 1401.28 <u>Installation of New Underground Storage Tank Systems.</u>

(a) Any person installing a tank or an individual system component shall be certified for underground storage tank installation and retrofitting by the International Code Council (ICC). The certified tank installer shall be qualified by the equipment manufacturer for every component of the system. The certified tank installer shall have an understanding of the national underground storage tank regulations and industry codes of practice. When requirements are not specified by the manufacturer, the certified tank installer shall install a tank or an individual system component according to Petroleum Equipment Institute, RP 100, Recommended Practices for Installation of Underground Liquid Storage Systems, American Petroleum Institute, API 1615, Installation of Underground Petroleum Storage Systems, and API 1632, Cathodic Protection of Underground Petroleum Storage Tanks and Piping Systems. The person shall also comply with safety and testing requirements according to NFPA 30, Flammable and Combustible Liquids Code, NFPA

- 30A, Motor Fuel Dispensing Facilities and Repair Garages and NFPA 329, Recommended Practice for Handling Releases of Flammable and Combustible Liquids and Gases.
- (b) The certified tank installer shall perform a piping pressure test of the primary piping, secondary containment piping, vent piping, and stage II piping after installation and prior to backfill to determine tightness in accordance with the manufacturer's test requirements.
- (c) When no manufacturer's test requirements are specified for the primary piping, vent piping, and stage II piping the certified tank installer shall perform the piping pressure test after installation and prior to backfill in accordance with the American Petroleum Institute, RP 1615.
- (d) When no manufacturer's test requirements are specified, for the secondary containment piping, the certified tank installer shall:
 - (1) Pressurize flexible secondary containment piping at 5 psi and maintain the pressure for a minimum period of 10 minutes before backfill; and
 - (2) Pressurize nonflexible secondary containment piping at 10 psi and maintain the pressure for a minimum period of 10 minutes before backfill.
- (e) All installed secondary containment piping shall be pressurized in accordance with (b) or (d) above, and:
 - (1) Maintain the required pressure for a minimum period of 2 hours after the backfill process has been completed; and
 - (2) All testing equipment removed to allow leak monitoring of piping.
- (f) Test gauge ranges shall conform with nationally recognized industry codes of practice. All the piping joints and connections shall be soaped and observed for leaks for the duration of the piping pressure test.
- (g) The certified tank installer shall certify and file the results of (b), (c), and (d), above before the piping system is backfilled, with the department and the owner at the time of backfill inspection of the system.
- (h) The certified tank installer shall certify and file the results of (e), above with the facility owner within 30 days of the test.
- (i) The certified tank installer shall test all installed sumps for tightness in accordance with the manufacturer's requirements.
- (j) When no manufacturer's test requirements are specified for tightness testing of sumps, the certified tank installer shall perform either a hydrostatic test in accordance with (k) below, or a pneumatic test, in accordance with (m) below.
 - (k) A hydrostatic sump tightness test shall be performed:
 - (1) After all seams, piping connections, and conduits to the sump have been completed and installed;
 - (2) At a level that is within 1 inch of the top of the sump or 12 inches above the highest penetration through the sump;
 - (3) By recording the liquid level measurements at the beginning and end of the test;

- (4) For a minimum of 3 hours; and
- (5) With no addition of liquid to the sump.
- (l) A passing hydrostatic sump tightness test, when conducted in accordance with (k) above, shall have no loss of liquid or observed leaks after the complete duration of the test.
- (m) The pneumatic sump test conducted to determine the tightness of a sump shall be performed at a pressure and duration required by the manufacturer of the testing equipment or nationally recognized industry codes of practice.
- (n) The certified tank installer shall certify and file the results of (i) and (j) above, with the department and owner at the time of the backfill inspection of system.
- (o) For steel tanks, the tank coating shall be thoroughly inspected, and any scratches, gouges, voids, or other discontinuities found in the coating shall be repaired according to the manufacturer's requirements prior to installation.
- (p) Whenever an existing tank is removed prior to the installation of a new tank, all applicable requirements of Env-Wm 1401.18 shall be met.
- (q) Whenever an existing tank is removed prior to the installation of a new tank, all system piping that does not meet the standards for new underground storage tank systems as specified in Env-Wm 1401.22 shall be closed in accordance with Env-Wm 1401.18.
- (r) Whenever existing piping is replaced or extended the entire piping system shall meet the requirements of Env-Wm 1401.24.
- (s) Systems shall not be installed in areas subject to flooding over the top of the tank unless provisions are made to ensure that the tank shall not float and its contents shall not escape during a flood. For areas where the ground surface is below the 100- year flood elevation, special provisions for tank anchoring and product containment shall be provided to the department with the plan required pursuant to Env-Wm 1401.20.
- (t) All new underground piping systems shall be laid out to minimize crossovers and, within construction limits, shall run in a compact trench to the point of use.
- (u) Piping systems shall uniformly slope from the terminating point of a primary piping run towards the tank at a minimum of 1/8 inch per foot.
- (v) A concrete pad having positive limiting barriers shall be utilized at dispensing areas. The positive limiting barriers shall be constructed and maintained to contain a volume of at least 5-gallons for each dispenser. Dispensing nozzles shall not extend beyond positive limiting barriers.
- (w) When spill containment is installed within a secondary containment sump the secondary containment sump shall be equipped with a sump sensor.
- (x) The owner shall notify the department of the completion of installation of a new or substantially modified system at least 5 department business days prior to backfilling the tank top and/or piping, to arrange for an inspection.
- (y) The owner shall submit to the department a letter prepared and stamped by a New Hampshire licensed professional engineer, stating that the underground storage tank system has received an on-site inspection by a New Hampshire licensed professional engineer verifying it was constructed in accordance with the department's approved plans and specifications, at least 8 department working hours prior to an inspection by the department.

- (z) When discrepancies of the approved plans and specifications are discovered, the owner shall submit to the department as-built record drawings prepared and stamped by a New Hampshire licensed professional engineer showing actual installation conditions.
- (aa) The department shall inspect the system prior to backfilling. The owner shall correct any discrepancies discovered by the department between the actual installation and approved plans within 30 days of the initial inspection and shall notify the department to arrange a follow-up inspection.
- (ab) The new system shall not be backfilled or placed into service until the department has performed an inspection.
- (ac) At all new underground storage tank sites, as of the 2005 effective date of these rules, the underground storage tank system shall be located no closer than the following:
 - (1) For all gasoline underground storage tank systems at least 500 feet from a public water system well;
 - (2) For all regulated substances except gasoline underground storage tank systems at least 400 feet from a public water supply well;
 - (3) For all gasoline underground storage tank systems at least 250 feet from a non-public water supply well; or
 - (4) For all regulated substances except gasoline underground storage tank systems at least 75 feet from a non-public water supply well.
- (ad) Whenever an underground storage tank system is replaced, an attempt shall be made to relocate the system such that any applicable water supply well protective separation distance as specified in (ac) above is achieved.
- (ae) With the exception of marinas, no underground storage tank system at any new site shall be located closer than 75 feet from surface waters of the state.
- (af) Spill containment equipment shall be tested for tightness in accordance with the manufacturer's requirements or nationally recognized industry codes of practice and the results shall be submitted to the department at the time of inspection.
 - (ag) Bollards shall be installed around free standing vents to prevent damage.
 - (ah) Spill containment equipment shall be installed on all Stage I riser pipes.
 - (ai) Swivel adaptors shall be installed on all fill riser pipes.
- (aj) All line leak detectors shall be tested in accordance with the manufacturer's requirements and the passing test results submitted to the department before the product is used for consumption.
- (ak) Storm water runoff from underground storage tank facilities shall not be discharged to the subsurface.
 - (al) Storm water shall not be directed to flow over any tank pad or dispensing pad.
- (am) Prior to the department authorizing an underground storage tank system to be placed into service, the owner shall submit to the department a letter prepared and stamped by a New Hampshire licensed professional engineer stating that the installation has been completed in accordance with the department's approved plans and the requirements of Env-Wm 1401.28(v), (ag), (ak) and (al).

Source. #6499, eff 4-24-97; ss by #8281, eff 2-3-05

Env-Wm 1401.29 Release Detection for Tanks Without Secondary Containment and Leak Monitoring.

- (a) With the exception of on-premise-use heating oil tanks that are otherwise subject to these rules, underground storage tanks without secondary containment and leak monitoring shall be equipped with release detection and be monitored for releases.
- (b) Owners of underground storage tanks without secondary containment and leak monitoring shall conduct automatic tank gauging for release detection.
 - (c) Groundwater or soil gas vapor monitoring shall not be installed as a release detection mechanism.
- (d) Owners of system(s) with no release detection shall perform a full system tightness test, pursuant to Env-Wm 1401.13. The owner shall submit to the department results of the tightness test and assessment within 15 days of the completed work.
- (e) When automatic tank gauging is used for release detection, the gauge shall provide at least one passing test in a 30 day period for tank leakage. The automatic tank gauge shall operate daily in a leak detection mode in accordance with the manufacturer's requirements.
- (f) The automatic tank gauge shall be capable of detecting at least a 0.2 gallon per hour leak rate from any portion of the tank that routinely contains product and shall meet the requirements of 40 CFR 280.40(a)(3).
- (g) Automatic tank gauging equipment and devices shall be maintained in good working order at all times to continuously perform their original design function and shall be inspected and tested annually in accordance with the manufacturer's requirements for proper operation.
- (h) The owner shall submit the annual automatic tank gauging test results on a form obtained from the department. The form shall be submitted to the department no later than 30 days after the date of the test.
 - (i) The results of an automatic tank gauging test shall include the following:
 - (1) Location and name of the facility;
 - (2) Facility registration number;
 - (3) Date of the test;
 - (4) Tester's name, company address and telephone number;
 - (5) Automatic tank gauging model number and manufacturer's name;
 - (6) Test results;
 - (7) Verification that the automatic tank gauging equipment is correctly programmed to notify the operator of an alarm; and
 - (8) Verification that the automatic tank gauging equipment is correctly programmed to perform in accordance with Env-Wm 1401.29(e) and (f), above.
- (j) The tester who has conducted the test shall sign the following: "I hereby verify that the automatic tank gauging system was tested to conform with Env-Wm 1401.29(f) and that the equipment identified in this report is operating according to its original design function."

- (k) Automatic tank gauge devices shall not be turned off or deactivated for more than 2 hours without prior notification by the operator to the department. Any malfunction shall be repaired within 30 working days. If the device(s) cannot be repaired within 30 days, the affected system(s) shall be temporarily closed until satisfactory repairs are made.
- (l) All release detection monitoring consoles shall be conspicuously marked or labeled as being monitoring devices.
- (m) An automatic tank gauging leak, release or failure shall be indicated by an inconclusive test or a test result of greater than 0.2 gallons per hour.
- (n) The owner of an underground storage tank system shall report any automatic tank gauging failure to the department immediately.
 - (o) An automatic tank gauging test result failure shall be addressed as follows:
 - (1) The owner shall perform an investigation in accordance with Env-Wm 1401.16 into the cause of the failure to determine if a release has occurred; and
 - (2) If a possible release of regulated substance from the system has occurred, the owner shall comply with all requirements of Env-Ws 412 and Env-Wm 1403.
- (p) Existing monitoring wells shall be clearly marked and secured to avoid unauthorized access and tampering.
- (q) The owner shall monitor the existing groundwater monitoring wells for the presence of releases at least monthly.
- (r) The owner performing the monitoring shall monitor the existing wells in accordance with one of the following:
 - (1) By the use of a continuous monitoring device that shall detect the presence of regulated substance or sheen on top of the groundwater in the monitoring wells; or
 - (2) By manual methods that shall be able to detect regulated substance or sheen on top of the groundwater in the monitoring wells.
- (s) The owner shall sample each existing monitoring well at least annually and shall submit the collected groundwater samples to a New Hampshire-certified laboratory for analysis for the presence of regulated substance, and shall submit the test results to the department within 30 days of the test.
- (t) The owner shall notify the department within 24 hours whenever a regulated substance is detected by observation, a continuous detection device, or laboratory analysis of groundwater well samples.
- (u) Existing monitoring wells shall not be used as a release detection method at facilities where releases have previously occurred or groundwater is contaminated with a regulated substance.
- (v) The owner shall monitor existing soil gas vapor monitoring wells for the presence of releases at least monthly.
- (w) The owner shall notify the department within 24 hours whenever vapor monitoring devices detect any increase in concentration above background concentrations.

Source. #6499, eff 4-24-97; ss by #8281, eff 2-3-05

Env-Wm 1401.30 Release Detection for Piping.

- (a) With the exception of on-premise-use heating oil systems that are otherwise subject to these rules, all pressurized piping without secondary containment and leak monitoring shall be monitored for releases.
- (b) Owners of pressurized piping without secondary containment and leak monitoring shall conduct annual tightness testing for release detection. Pipe pressure tightness tests shall have a detection limit equivalent to 0.1 gallon per hour at 1.5 times operating pressure.
- (c) Groundwater or soil gas vapor monitoring wells shall not be installed as a release detection mechanism.
- (d) All pressurized piping shall be equipped with an automatic line leak detector which shall restrict or stop the flow of the stored substance and trigger an audible or visual alarm upon detecting a leak at a rate of 3 gallons per hour at a pressure of 10 pounds per square inch line pressure within one hour and shall meet the requirements of 40 CFR 280.40(a)(3).
- (e) Automatic line leak detectors shall be tested annually in accordance with the manufacturer's requirements to confirm that they are operating in accordance with their designed function.
 - (f) The automatic line leak detector test report shall include:
 - (1) Location and name of the facility;
 - (2) Facility registration number;
 - (3) Date of the test;
 - (4) Testing company name, address, and telephone number;
 - (5) Testers name and signature;
 - (6) Test locations; and
 - (7) Test results.
- (g) The line leak detection tester who has conducted the test shall sign the following: "I hereby verify that the automatic line leak detector(s) were tested to confirm that they are operating according to manufacturers' requirements."
- (h) When an automatic line leak detector test is performed, the owner shall send the information specified in (f) and (g), above to the department no later than 30 days after the date of the test.
- (i) The information required in (f) and (g) above, shall be recorded on a form obtained from the department.
- (j) An automatic line leak detector failure shall be indicated by a leak rate of greater than 3 gallons per hour at a pressure of 10 pounds per square inch line pressure within one hour.
- (k) The failed line leak detector shall be repaired or replaced immediately and shall meet the requirements of Env-Wm 1401.30(d). The affected piping system(s) shall be taken out of service until satisfactory repairs are made or the line leak detector is replaced.
- (l) When existing groundwater monitoring is used the owner shall monitor the groundwater monitoring wells for the presence of releases at least monthly.

- (m) The owner performing the monitoring shall monitor the wells in accordance with one of the following:
 - (1) By the use of a continuous monitoring device that shall detect the presence of regulated substance or sheen on top of the groundwater in the monitoring wells; or
 - (2) By manual methods that shall be able to detect regulated substance or sheen on top of the groundwater in the monitoring wells.
- (n) The owner shall sample each existing monitoring well at least annually and shall submit the collected groundwater samples to a New Hampshire-certified laboratory for analysis for the presence of regulated substance, and shall submit the test results to the department within 30 days of the test.
- (o) The owner shall notify the department within 24 hours whenever a regulated substance is detected by observation, a continuous detection device, or laboratory analysis of groundwater well samples.
- (p) When soil gas vapor monitoring is used the owner shall notify the department within 24 hours whenever vapor monitoring devices detect any increase in concentration above background concentrations.
- (q) When annual line tightness testing is used, the owner shall submit test results to the department no later than 30 days after the date of the test.
 - (r) Release detection for systems with suction or atmospheric piping shall be one of the following:
 - (1) Performance of a line tightness test in accordance with (q), above once every 3 years;
 - (2) Existing groundwater monitoring and soil vapor monitoring in accordance with (l), (m) and (n) above.
- (s) When line tightness testing is used for suction or atmospheric piping, the owner shall submit test results to the department. Pipe pressure tightness test shall have a detection limit equivalent to 0.1 gallon per hour at 1.5 times operating pressure.
- (t) Release detection shall not be required for suction or atmospheric piping that is demonstrated, by department inspection or by plans submitted by the owner, to be designed and constructed to meet the following standards:
 - (1) The piping operates at atmospheric pressure or at less than atmospheric pressure;
 - (2) The piping is continuously sloped so that the contents of the piping will drain back into the storage tank if the suction is released;
 - (3) No more than one check valve is included in each suction line; and
 - (4) The check valve is located directly below and as close as practical to the suction pump.
- (u) A tightness test failure shall be indicated by a test result of 0.10 gallon per hour or greater or an inconclusive test and shall be addressed as follows:
 - (1) The owner shall perform an investigation into the cause of the failure to determine if a release has occurred in accordance with Env-Wm 1403 and Env-Ws 412;
 - (2) The investigation into the cause of an initial test failure shall be completed within 7 days;

- (3) The owner shall submit a written report to the department within 30 days of the failure which describes the work performed, the repairs made, and any other actions taken in response to the test failure; and
- (4) Any piping system that has been repaired shall be retested for tightness to confirm the effectiveness of the repairs.
- (v) When the cause of the failure is unknown or there is a possible release to the environment, the owner shall notify the department within 24 hours of the occurrence in accordance with Env- Wm 1403.

Source. #6499, eff 4-24-97; ss by #8281, eff 2-3-05

Env-Wm 1401.31 Operation of Leak Monitoring Equipment.

- (a) Leak monitoring equipment and devices shall be maintained in good working order at to continuously perform their original design function and shall be tested annually for proper operation.
- (b) The interstitial space or annular space for both tanks and piping shall be maintained free of debris and water.
- (c) The owner shall submit the annual leak monitor test results on a form obtained from the department. The form shall be submitted to the department no later than 30 days after the date of the test.
 - (d) The results of the leak monitor test shall include the following:
 - (1) Location and name of the facility;
 - (2) Facility registration number;
 - (3) Date of the test;
 - (4) Tester's name, company address, and telephone number;
 - (5) Leak monitor model number and manufacturer's name;
 - (6) Test results;
 - (7) Verification that the leak monitor console assignments are correctly programmed and labeled for all sensors;
 - (8) Verification that the tank and piping sensors for the secondary containment is positioned in accordance with the manufacturer's requirements;
 - (9) Verification that the brine level of the tank interstitial space is within the manufacturer's operating range;
 - (10) Confirmation that the secondary containment is free of debris, water, and regulated substance;
 - (11) Confirmation that all sensors were visually inspected and confirmed operational by manually simulating an alarm condition;
 - (12) Verification that all leak monitor console audible alarms are operational;
 - (13) Verification that all leak monitor console visual alarms are operational; and
 - (14) Verification that all secondary containment is continuously monitored.

- (e) The tester who has conducted the test shall sign the following: "I hereby verify that the equipment identified in this document was tested for proper operation in performance of the original design function in accordance with the manufacturers' requirements. Attached to this form is information (If available, system set-up reports) necessary to verify that this information is correct."
- (f) Leak monitoring devices shall not be turned off or deactivated for more than 2 hours without prior notification by the owner to the department. Any malfunctioning device shall be repaired and any alarm condition cleared and reset to normal operating mode within 15 working days. If the device(s) cannot be repaired and the alarm condition cleared and reset to normal operating mode within 15 days, the affected system(s) shall be temporarily closed until satisfactory repairs are made.
- (g) Leak monitors shall employ an audible alarm and visual indicator, and shall be so located as to be readily heard and seen by the operator or other personnel during normal working hours.
- (h) All monitoring devices shall be conspicuously marked or labeled as being monitoring devices and shall be secured against vandalism and incidental damage.
- (i) All leak monitoring consoles shall identify the specific location of all leak monitoring sensors. A complete list of all the specified leak monitoring sensors shall be permanently affixed on the facility premises and visible to a department inspector.
- (j) When a leak monitor indicates a possible leak, the owner shall perform an investigation into the cause of the indication to determine if a leak has occurred, in accordance with Env-Wm 1401.16.

Source. #6499, eff 4-24-97; ss by #8281, eff 2-3-05

Env-Wm 1401.32 Corrosion Protection for Steel Tanks.

- (a) All new underground storage tanks shall be protected from corrosion. Corrosion protection for new tanks shall comply with 40 CFR 280.20(a).
- (b) All existing steel underground storage tanks shall be protected from corrosion. Corrosion protection for existing steel tanks shall comply with 40 CFR 280.21(b)(2) or (3).
- (c) All new and existing cathodic protection systems shall be equipped with an accessible test connection or monitor. A cathodic protection tester shall test sacrificial anode systems within 6 months of installation and every 3 years thereafter.
- (d) A cathodic protection tester shall test impressed current systems within 6 months of installation and every 3 years thereafter.
 - (e) The results of the cathodic protection test shall include the following:
 - (1) Location and name of the facility;
 - (2) Facility registration number;
 - (3) Date of the test;
 - (4) Testing company name and telephone number;
 - (5) Equipment used to conduct the test;
 - (6) Test locations;

- (7) Test results; and
- (8) Tester's International Code Council or NACE certification number.
- (f) The cathodic protection tester who has conducted the test shall sign the following: "I hereby certify that I am a cathodic protection tester who has an understanding of the principles and measurements of all common types of techniques used to prevent corrosion of a metal surface by making that surface the cathode of an electrochemical cell as applied to buried piping and tank systems."
- (g) When a cathodic protection test is performed, the owner shall send the information specified in (e) and (f), above to the department no later than 30 days after the date of the test.
- (h) The information required in (e) and (f), above shall be submitted on a form obtained from the department.
 - (i) A tank shall be considered cathodically protected when one of the following requirements is met:
 - (1) A negative cathodic potential of at least 850 mV with the cathodic protection applied, which shall be measured with respect to a saturated copper/copper sulfate reference electrode contacting the electrolyte;
 - (2) A minimum of 100 mV of cathodic polarization; or
 - (3) The requirements specified in NACE International approved criteria Standard RP0285- 2002, Corrosion Control of Underground Storage Tank Systems by Cathodic Protection.
- (j) When a cathodic protection system cannot meet the requirements of (i), above, the owner shall submit documentation to the department that the repair of the cathodic protection system was performed in accordance with Env-Wm 1401.34.

Source. #6499, eff 4-24-97; ss by #8281, eff 2-3-05

Env-Wm 1401.33 Corrosion Protection for Piping.

- (a) All new metal piping used as secondary containment for piping that routinely contains regulated substances and is in contact with the soil or other backfill material shall be protected from corrosion. Corrosion protection for new piping shall comply with 40 CFR 280.20(b).
- (b) All existing metal piping that routinely contains regulated substances and is in contact with the soil or other backfill material shall be protected from corrosion. Corrosion protection for existing metal piping shall comply with 40 CFR 280.21(c).
 - (c) All new metal vent piping shall be protected from corrosion.
- (d) All new and existing cathodic protection systems shall be equipped with an accessible test connection or monitor. A qualified cathodic protection tester shall test sacrificial anode systems within 6 months of installation and every 3 years thereafter.
- (e) The impressed current systems shall be tested by a qualified cathodic protection tester within 6 months of installation and every 3 years thereafter.
- (f) When a cathodic protection test is conducted, the information required for reporting the results of the cathodic protection test shall include the following:
 - (1) Location and name of the facility;

- (2) Facility registration number;
- (3) Date of the test;
- (4) Testing company name and telephone number;
- (5) Equipment used to conduct the test;
- (6) Test locations;
- (7) Test results; and
- (8) Tester's International Code Council or NACE certification number.
- (g) The cathodic protection tester who has conducted the test shall sign the following: "I hereby certify that I am a cathodic protection tester who has an understanding of the principles and measurements of all common types of techniques used to prevent corrosion of a metal surface by making that surface the cathode of an electrochemical cell as applied to buried piping and tank systems."
- (h) When a cathodic protection test is performed, the owner shall send the information specified in (f) and (g), above to the department no later than 30 days after the date of the test.
- (i) The information required in (f) and (g), above shall be submitted on a form obtained from the department.
- (j) A piping system shall be considered cathodically protected when one of the following requirements is met:
 - (1) A negative cathodic potential of at least 850 mV with the cathodic protection applied, which shall be measured with respect to a saturated copper/copper sulfate reference electrode contacting the electrolyte;
 - (2) A minimum of 100 mV of cathodic polarization; or
 - (3) The requirements specified in NACE International approved criteria Standard RP0285-2002, Corrosion Control of Underground Storage Tank Systems by Cathodic Protection.
- (k) When a cathodic protection system cannot meet the requirements of (j), above the owner shall submit documentation to the department that the repair of the cathodic protection system was performed in accordance with Env-Wm 1401.34.

Source. #6499, eff 4-24-97; ss by #8281, eff 2-3-05

Env-Wm 1401.34 Corrosion Protection Systems.

- (a) No alterations shall be made to an existing cathodic protection system.
- (b) When the existing cathodic protection system is changed, to an alternate method of cathodic protection, at least 90 days prior to commencing construction or installation, the owner shall submit plans, a completed application provided by the department, and specifications as required by RSA 146-C:7, I with the fee required by RSA 146-C:7, I-a to the department.
 - (c) The corrosion protection plan shall be prepared by a corrosion protection expert and include:
 - (1) The alternate proposed corrosion protection system to be installed; and

- (2) All structures to be corrosion protected.
- (d) Within 90 days of submission of plans and specifications, the department shall approve plans that demonstrate compliance with the requirements of these rules, or issue a notice of incompleteness or disapproval for plans that do not demonstrate compliance with these rules.
- (e) As specified in RSA 146-C:7, II, an owner shall not cause or allow a change which is not in accordance with the approved plans and all terms and conditions of the department's approval.
- (f) An approval granted for construction or installation of a corrosion prevention system, shall be valid for one year from the date of issuance. If construction of the installation is not completed within one year, the approval shall be void.
- (g) When an existing cathodic protection system is repaired by the installation of a similar method of cathodic protection, the owner of an underground storage tank system shall address a repair to an existing corrosion protection system as follows:
 - (1) No later than 30 days after the date of the corrosion protection test, submit to the department the test results as required by Env-Wm 1401.32 (e) and (f) on a form obtained from the department, and
 - (2) Submit to the department a report prepared and signed by a corrosion expert identifying the cause of the failure and the procedures required to repair the cathodic protection system.
- (h) No later than 30 days following the repair to the cathodic protection system, the owner shall submit to the department the following:
 - (1) A record drawing of the repair;
 - (2) The information as required by Env-Wm 1401.32 (e) and (f) of the corrosion protection test on a form obtained from the department; and
 - (3) A report prepared and signed by a corrosion expert certifying the cathodic protection system repair was conducted under the direction of a corrosion expert and the repaired underground storage tank system has adequate cathodic protection.
- (i) When a failed cathodic protection system is not repaired within 90 days of the cathodic protection test date, the owner shall permanently close the underground storage tank system in accordance with Env-Wm 1401.18.

Source. #6499, eff 4-24-97; ss by #8281, eff 2-3-05

Env-Wm 1401.35 <u>Installation of New and Replacement Fueling Systems over Surface Waters.</u>

- (a) Underground storage tank systems at fueling facilities dispensing fuels over water shall meet the requirements of these rules and National Fire Protection Association, NFPA 30, Flammable and Combustible Liquids Code; 2003 Edition and NFPA 30A, Motor Fuel Dispensing Facilities and Repair Garages; 2003 Edition.
- (b) Piping systems where tanks are at an elevation that produces a pressure due to gravity at the dispenser shall be equipped with an anti-siphon device installed adjacent to and downstream from a manually operated shutoff valve. The anti-siphon device and manual shutoff valve shall be located inside a liquid-tight collection sump at the tank.

- (c) Piping systems shall have continuous secondary containment or be equipped with liquid-tight sumps at locations where continuous secondary containment is not possible.
 - (d) All liquid-tight sumps shall have a sump sensor.
- (e) Piping systems shall be equipped with flexible secondarily contained piping between any floating structure and the shore.
- (f) Piping systems shall be equipped with the readily accessible shutoff valve located on the shore, and as close to the shoreline as possible. The valve shall be installed adjacent to and upstream from the location employing flexible piping from a floating structure and the shore.
 - (g) Piping systems shall be protected from physical damage.
- (h) Dispensing nozzles shall be automatic closing type without a device that allows the dispensing nozzle to remain open.
 - (i) Piping shall not be in contact with surface water.

Source. #6499, eff 4-24-97; ss by #8281, eff 2-3-05

Env-Wm 1401.36 Testing of Sumps.

- (a) All new sumps shall be tested for tightness within 30 days from installation, in accordance with the manufacturer's requirements.
- (b) When no manufacturer's test requirements are specified for tightness testing of sumps, the owner shall perform either a hydrostatic test in accordance with (c) below, or a pneumatic test, in accordance with (e), below.
 - (c) A hydrostatic test shall be performed:
 - (1) After all seams and fittings have been completed and all piping and conduits have been installed;
 - (2) At a level that is within one inch of the top of the sump or 12 inches above the highest seam or fitting through the sump;
 - (3) By recording the liquid level measurements at the beginning and end of the test;
 - (4) For a minimum of 3 hours; and
 - (5) With no addition of liquid to the sump.
- (d) A passing hydrostatic test, when conducted in accordance with (c) above, shall have no loss of liquid or observed leaks after the complete duration of the test.
- (e) The pneumatic test conducted to determine the tightness of a sump shall be performed at a pressure and duration required by the manufacturer of the testing equipment or nationally recognized industry codes of practice.
- (f) When a tightness test for a sump is performed, the owner shall submit a tightness test report to the department no later than 30 days after the date of the test.
 - (g) The tightness test report shall include:

- (1) The facility name and registration number;
- (2) The test company name, address, and telephone number;
- (3) The name of the test technician;
- (4) The method of testing and a copy of the field technician's testing records;
- (5) Any other information to accurately identify the tested components;
- (6) A description of any piping, fittings, or connections that were tightened or repaired;
- (7) The date of last calibration and maintenance of the tightness testing equipment, if applicable; and
- (8) For tests other than the hydrostatic test specified in (c) above, the test duration time.
- (h) The technician performing the tightness test shall sign a test report that certifies:
 - (1) The validity, method, and accuracy of the test;
 - (2) That the test complies with requirements of these rules; and
 - (3) The tester is qualified to perform the test.
- (i) A sump tightness test shall be performed as specified by the test equipment manufacturer's specifications.

Source. #6499, eff 4-24-97; ss by #8281, eff 2-3-05

Env-Wm 1401.37 Repair of Tanks.

- (a) A liner shall not be installed to repair an underground storage tank.
- (b) An underground storage tank that discharges, leaks, spills, or releases a regulated substance to the environment shall be permanently closed in accordance with Env-Wm 1401.18.
 - (c) Prior to repairing an underground storage tank the owner shall:
 - (1) Provide a report to the department regarding the procedures on how the repair will be accomplished;
 - (2) Either:
 - a. Conduct a tightness test on the primary and secondary walls within 30 days of the proposed repair in accordance with Env-Wm 1401.13 or manufacturer's recommendation for testing the primary and secondary wall to ensure that the tank is sound and free of holes or fractures that may cause leaks or releases; or
 - b. Conduct an assessment in accordance with Env-Ws 412 and Env-Wm 1403 within 30 days of the proposed repair to ensure that the tank is sound and free of corrosion and other holes or fractures that may cause leaks or releases;
 - (3) Provide documentation from the tank manufacturer authorizing the repair; and
 - (4) Provide the name and telephone number of the certified tank installer that performed the repair.

- (d) Following repairs to the tank and prior to adding regulated substance the owner shall submit to the department a report including:
 - (1) The cause and location of the failure;
 - (2) Procedure to return the interstitial space to its original operating condition;
 - (3) Documentation from the tank manufacturer certifying the repair; and
 - (4) The name and telephone number of the certified tank installer that performed the repair.
- (e) Within 30 days of the repair and prior to adding regulated substance, the tank shall be tightness tested in accordance with Env-Wm 1401.13 or manufacturer's recommendation for testing the primary tank and interstitial space.
- (f) The owner shall submit all reports and documents describing the types of the tests, contractor, date, materials, all technical testing data and any other information pertinent to the work performed, as required by Env-Wm 1401.37, to the department no later than 30 day after the test.
- (g) Repairs shall be conducted and tested in accordance with Fiberglass Petroleum Tank and Pipe Institute, Recommended Practice T-95-02, Remanufacturing of Fiberglass Reinforced Plastic (FRP) Underground Storage Tanks and the Petroleum Equipment Institute's, RP 100, Recommended Practices for Installation of Underground Liquid Storage Systems.
- (h) Repairs to composite tanks shall be conducted in accordance with industry codes of practice developed by a nationally recognized association.
- (i) Repairs to steel tanks shall be conducted in accordance with industry codes of practice developed by a nationally recognized association.

Source. #6499, eff 4-24-97; ss by #8281, eff 2-3-05

Env-Wm 1401.38 Repair and Replacement of Piping Systems.

- (a) With the exception of vent piping, single wall systems that discharge, leak, spill, or release a regulated substance to the environment shall be permanently closed in accordance with Env-Wm 1401.18.
- (b) When a tank is removed and replaced, the entire piping system shall also be replaced, unless it meets the requirements of Env-Wm 1401.22 and Env-Wm 1401.24 for piping systems.
- (c) Prior to the repair to an integral unit of piping of less than 25 feet, the owner shall submit to the department the following information:
 - (1) The name and telephone number of the certified tank installer to perform the repair;
 - (2) Either:
 - a. Results of an assessment performed in accordance with Env-Wm 1401.18 (g)(8);
 - b. Results of a piping pressure test performed in accordance with the manufacturer's test requirements; or
 - c. When no manufacturer's test requirement are specified, results of a piping pressure test performed in accordance with nationally recognized industry codes of practice; and

- (3) Written approval from the piping manufacturer allowing the repair.
- (d) No later than 30 days after the date of the repair to the piping system, the owner shall submit to the department a written report including the following:
 - (1) The cause for the failure, the work performed, and any other procedures required to repair the piping system back to original condition;
 - (2) The name and telephone number of the certified tank installer that performed the repair;
 - (3) The date of the repair; and
 - (4) A passing tightness test performed in accordance with (2) b. or c., above to confirm the effectiveness of the repair.

Source. #6499, eff 4-24-97; ss by #8281, eff 2-3-05

Env-Wm 1401.39 Field-Fabricated Tanks.

- (a) Field-fabricated underground storage tanks shall not be used unless the complete system is designed by a New Hampshire licensed professional structural engineer licensed under RSA 310-A and manufactured and installed in accordance with standards of Underwriters Laboratories, Inc., UL 1316, Glass-Fiber-Reinforced Plastic Underground Storage Tanks for Petroleum Products, Alcohols, and Alcohol-Gasoline Mixtures, or UL 58, Standard for Steel Underground Tanks for Flammable and Combustible Liquids.
 - (b) New field-fabricated tanks shall meet all requirements of these rules for new installations.
- (c) The owner shall submit plans and specifications for the field fabrication to the department for approval in accordance with Env-Wm 1401.20.
 - (d) The New Hampshire licensed structural professional engineer shall certify that:
 - (1) A field-fabricated tank is necessary because installation of a factory fabricated tank is not feasible; and
 - (2) The design plans and specifications meet all applicable requirements of these rules.

Source. #6499, eff 4-24-97; ss by #8281, eff 2-3-05

Env-Wm 1401.40 Waivers.

- (a) An owner may request a waiver of specific rules in this part in accordance with (b), below.
- (b) All requests for waivers shall be submitted in writing to the department on a form obtained from the department;
 - (c) The form shall include the following information:
 - (1) A description of the facility to which the waiver request relates, including the name, address, and registration number of the facility;
 - (2) A specific reference to the section of the rule for which a waiver is being sought;
 - (3) A full explanation of why a waiver is necessary;

- (4) A full explanation of the alternatives for which a waiver is sought, with backup calculations and data for support; and
- (5) A full explanation of how the grant of the waiver is consistent with the intent of RSA 146-C.
- (d) The department shall grant a waiver upon finding that:
 - (1) The alternatives proposed are at least equivalent to the specific requirements contained in the rule; or
 - (2) If the alternatives proposed are not equivalent to the requirements contained in the rule, they are adequate to ensure that the intent of RSA 146-C and these rules is met.
- (e) The department shall issue a written response to a request for a waiver within 60 days of receipt of the request.

<u>Source.</u> #6499, eff 4-24-97; ss and moved by #8281, eff 2-3-05 (from Env-Wm 1401.41)

Env-Wm 1401.41 Owner Liability. The owner may delegate responsibilities imposed by Env-Wm 1401 and Env-Wm 1404 to a person responsible for the day-to-day operation of the facility. Delegation shall not relieve the owner from liability for non-compliance with these requirements.

<u>Source.</u> #6499, eff 4-24-97; ss and moved by #8281, eff 2-3-05 (from Env-Wm 1401.42)

Env-Wm 1401.42 Reference Standards.

- (a) Referenced standards shall be available for inspection at the Department of Environmental Services, Waste Management Division, 29 Hazen Drive, Concord, New Hampshire 03301 and might be available from the following sources:
 - (1) American National Standards Institute (ANSI), 1819 L Street, N.W. 6th Floor, Washington D.C., 20036, (202) 293-8020.
 - (2) American Petroleum Institute (API), 1220 L Street, N.W., Washington, D.C. 20005-4070, (202) 682-8000.
 - (3) ASTM International (ASTM), 100 Barr Harbor Drive, P.O. Box C700, West Conshohocken, PA 19428-2959, (610) 832-9585.
 - (4) ASME International (ASME), 22 Law Drive, Fairfield, NJ, 07007-2900, (800) 843-2763.
 - (5) Fiberglass Petroleum Tank and Pipe Institute (FPTPI) 11150 South Wilcrest Drive, Suite 101, Houston, Texas 77099-4343, (281) 568-4100.
 - (6) International Code Council (ICC) 5203 Leesburg Pike, Suite 600, Falls Church, VA 22041, (703) 931-4533.
 - (7) NACE International, 1440 South Creek Drive, Houston, Texas 77084-4906, (281) 228-6200.
 - (8) National Fire Protection Association (NFPA), 1 Batterymarch Park, Quincy, Massachusetts 02169, (800) 344-3555.
 - (9) National Leak Prevention Association (NLPA) Route 2, PO Box 106A, Falmouth, KY 41040, (606) 654-8265.

- (10) Underwriters Laboratories Inc. (UL), 333 Pfingsten Road, Northbrook, Illinois 60062-2096, (847) 272-8800.
- (11) Underwriters' Laboratories of Canada (ULC), 7 Underwriters Road, Toronto, ON MIR 3B4, (416) 757-3611.
- (12) Petroleum Equipment Institute (PEI), P.O. Box 2380, Tulsa, Oklahoma 74101-2380, (918) 494-9696.
- (13) Steel Tank Institute (STI), 570 Oakwood Road, Lake Zurich, IL 60047, (847) 438-8265.
- (b) Where citations are used in this part, the owner shall refer to the publications listed below:
 - (1) From the American Society of Mechanical Engineers, the following:
 - a. ASME B31.3, "Process Piping;"
 - b. ASME B31.4, "Pipeline Transportation Systems for Liquid Hydrocarbons and Other Liquids;"
 - c. Section VIII: Pressure Vessels-Division 1, "ASME Boiler and Pressure Vessel Code."
 - (2) From the American Petroleum Institute, the following:
 - a. RP 1604, "Closure of Underground Petroleum Storage Tanks;"
 - b. RP 1615, "Installation of Underground Petroleum Storage Systems;"
 - c. RP 1631, "Interior Lining and Periodic Inspection of Underground Storage Tanks;"
 - d. RP 1632, "Cathodic Protection of Underground Petroleum Storage Tanks and Piping Systems;"
 - e. STD 2015, "Requirements for Safe Entry and Cleaning of Petroleum Storage Tanks"
 - (3) From ASTM International, the following:
 - a. G 158-98, "Standard Guide for Three Methods of Assessing Buried Steel Tanks;"
 - b. D2517-00e1, "Standard Specification for Reinforced Epoxy Resin Gas Pressure Pipe and Fittings;"
 - c. D2966-01, "Standard Specification for Filament-Wound Fiberglass (Glass-Fiber-Reinforced Thermosetting-Resin) Pipe."
 - (4) From the Fiberglass Petroleum Tank and Pipe Institute, the following:
 - a. Recommended Practice T-95-02, "Remanufacturing of Fiberglass Reinforced Plastic (FRP) Underground Storage Tanks."
 - (5) From NACE International, the following:
 - a. RP0169-2002, "Control of External Corrosion on Underground or Submerged Metallic Piping Systems;"

- b. RP0285-2002, "Corrosion Control of Underground Storage Tank Systems by Cathodic Protection."
- (6) From the National Fire Protection Association, the following:
 - a. NFPA 30, "Flammable and Combustible Liquids Code, 2003 Edition;"
 - b. NFPA 30A, "Motor Fuel Dispensing Facilities and Repair Garages, 2003 Edition;"
 - c. NFPA 329, "Recommended Practice for Handling Releases of Flammable and Combustible Liquids and Gases, 1999 Edition;"
 - d. NFPA 70, "National Electrical Code, 2005 Edition."
- (7) From the National Leak Prevention Association, the following:
 - a. Standard Number 631, "Interior Inspection and Lining of Steel and Fiberglass Underground Storage Tanks.
- (8) From Underwriters Laboratories Inc., the following:
 - a. UL 971, "Standard for Nonmetallic Underground Piping for Flammable Liquids;"
 - b. UL 58, "Standard for Steel Underground Tanks for Flammable and Combustible Liquids;"
 - c. UL 87, "Standard for Power-Operated Dispensing Devices for Petroleum Products;"
 - d. UL 1316, "Standard for Glass-Fiber-Reinforced Plastic Underground Storage Tanks for Petroleum Products, Alcohols, and Alcohol-Gasoline Mixtures;"
 - e. UL 1746, "Standard for External Corrosion Protection Systems for Steel Underground Storage Tanks."
- (9) From Underwriters' Laboratories of Canada, the following:
 - a. CAN/ULC-S603-1992, "Underground Steel Tanks;"
 - b. ORD-C58.10-1992, "Underground Jacketed Steel Tanks;"
 - c. ULC-S615-1998, "Underground Reinforced Plastic Tanks;"
 - d. ORD-C107.7-1993, "Glass-Fiber Reinforced Plastic Pipe and Fittings."
- (10) From the Petroleum Equipment Institute, the following:
 - a. RP 100, "Recommended Practices for Installation of Underground Liquid Storage Systems."
- (11) From the Steel Tank Institute, the following:
 - a. ACT-100, "Specification for External Corrosion Protection of FRP Composite Steel Underground Storage Tanks."
 - b. ACT-100-U, "Specification for External Protection of Composite Steel Underground Storage Tanks."

(c) Where there is any conflict between these rules and any of the referenced standards, the most stringent shall apply.

<u>Source.</u> #6499, eff 4-24-97; ss and moved by #8281, eff 2-3-05 (from Env-Wm 1401.43)

Env-Wm 1401.43 Facility Owner Responsibility Per Statute.

- (a) The owner of an underground storage facility shall comply with all requirements of Env-Wm 1401 and with the following statutes:
 - (1) An owner shall prohibit the discharge of regulated substance from any facility into or onto any land, groundwater, or surface water of the state in accordance with RSA 146-C:2;
 - (2) The owner of an underground storage facility shall register the facility with the department in accordance with RSA 146-C:3;
 - (3) The owner of an underground storage facility shall apply to the department for a permit to operate in accordance with RSA 146-C:4;
 - (4) The owner of an underground storage facility shall upon the request of any employee or authorized representative of the department furnish information related to the facility and permit such employees or authorized representative to have access to the facility in accordance with RSA 146-C:5;
 - (5) At least 90 days prior to commencing construction or installation of a new or replacement underground storage system or a substantial modification of an underground storage system, the owner shall submit plans and specifications as required by RSA 146-C:7, I with the fee required by RSA 146-C:7, I-a to the department; and
 - (6) Underground storage tanks that have been removed that do not meet the standards for new tanks shall not be reused as underground storage tanks for regulated substances in accordance with RSA 146-C:8.

<u>Source.</u> #6499, eff 4-24-97; ss and moved by #8281, eff 2-3-05 (formerly Env-Wm 1401.44)